

Vacuum Lifters for Windows and Sheet Materials

The Problem

Manually installing large windows and sheet materials requires workers to handle heavy and bulky objects. You may need to lift and carry them some distance to the installation site. When installing them, you may have to use a lot of strength to hold them while they are placed and secured.

This work puts stress on your back and shoulders, which can lead to serious muscle and joint injuries. Injuries can be even more serious when you have to work in awkward positions or hold materials for a long period of time. Manually placing windows and sheet materials may also lead to hand injuries.

One Solution

Use **vacuum lifters** to install windows and other flat panels. Vacuum lifters eliminate the need to manually lift and position heavy and awkward materials.

A vacuum lifter can be attached to a forklift, or to a small counter-balanced crane built in the shop. It can also be attached to a larger crane for outdoor work.

How It Works

There are both non-powered and powered vacuum lifter systems available with load capacities from 375 – 1400 pounds. Non-powered “hand cup” systems lift and carry the load using manually-operated, pump-

Problem: Installing window using manual suction cups still requires lifting



Solution: Using powered vacuum lift



style vacuum cups attached to a specially-designed frame. Some of these frames permit loads to be rotated and tilted. In some cases, the cups can be removed from the frame so they can be used individually for lifting and carrying.

Although some contractors use manual systems, a more typical system is a powered lifter using cups with a cord-free 12-volt vacuum pump. “Below-the-hook” powered vacuum lifters are a little more expensive but feature rotation and tilt.

Benefits for the Worker and Employer

Large window units and other panels can be installed without the usual physical stress that comes with lifting, carrying, holding, and positioning heavy objects. Using lifters will help reduce the possibility that a worker will develop a muscle or joint injury.

A vacuum lifter also keeps the fingers and arms from being caught in pinch points when positioning and setting the window or panel.

There should be a gain in productivity, since workers will be less fatigued and able to install more windows or panels. There may also be less damage to windows and other materials.

Approximate Cost

Manually-operated “hand cup” frames featuring rotation and tilt cost around \$1,200. You will spend about \$300 total for four 9-inch pump-style vacuum cups to use with them.

A basic four-cup DC-powered lifter costs around \$2,500. Below-the-hook vacuum lifters are available with various options and configurations, ranging from \$3,000 – 7,000.

For More Information

- Products related to this solution are described at www.cpwr.com/simple.html. Products also may be found on the internet using the following search terms: “vacuum lifters.”
- Local contractor tool and equipment suppliers or rental companies may be another source of information on products.
- For general information on this solution, check www.cpwrconstructionsolutions.org and www.elcosh.org.